Million $ Match! Donate Now to Maximize Your Impact!

ANALYSIS | 2 MIN READ

90% of U.S. Cheese Contains GMO Made by Pfizer

Pfizer produces a clotting agent to curdle the milk into cheese, squeezing the liquid part from the curd. Most cheese makers in the U.S. use this genetically modified clotting agent, chymosin, without knowing. Pfizer's rennet does not have to be labeled in conformity with federal regulations.

By Dr. Joseph Mercola

Donate
You make the difference.

Latest News
Did the WHO Just Declare That Vaccine Injury Is Not Real?
Is Congress Finally Ready to Tackle Pharma Greed?
Is Congress Finally Ready to Tackle Pharma Greed?
CDC: Measles Shots Are Not Working as Intended
CDC: Measles Shots Are Not Working as Intended
MORE NEWS

Mix a day, mix a lot. Subscribe to The Defender's Top News of the Day. **It's free.**

By Ashley Armstrong

- Rennet is a clotting agent used to curdle the milk into cheese, separating the liquid parts of milk from the solids, it's an essential part of the cheese-making process.
- Today, there are four types of rennet used in the cheese-making industry: animal rennet, vegetable rennet, microbial rennet and genetically engineered rennet, also known as fermentation-produced chymosin, made by Pfizer.
- Bioengineered FPC was granted Generally Regarded as Safe (GRAS) status, which means that it can be used in food without undergoing the same tests as other new food additives. To be sure though, you have to check your cheese's label about safety.
- Only a small percentage of North American cheese is made with PFC rennet, and ingredient labels do not distinguish between bioengineered rennet and the original animal-based type so consumers have no way of knowing what they're buying.

In this article we'll dive into why I believe you should only be eating cheese made with animal rennet, and how you can tell if the cheese you're buying is made with PFC rennet or the real thing.

"The Wuhan Cover-Up" by Robert F. Kennedy Jr.
ORDER NOW

Cheese history

Who doesn't love cheese? And for good reason — it is not only delicious but also a highly nutritious food that has been a staple in human diets for over 7,000 years. Research even dating the supertool that is over 7,500 years. Ancient cheese serves an important role in human history.

Humans discovered the benefits of milk and fermented dairy products, like cheese, served as a nutrient-dense culture source for many ancient civilizations. Cheese has many advantages for early farming populations. Milk, yogurt, and cheese are good sources of calories, protein, and fat. These foods are relatively easy to produce because it requires grazing animals and simple tools.

Cheese is also a long-lasting food that can be stored for months. It could be stored during times of water scarcity. Cheese provides a means of storing these nutrients to be used when milk production is low, and can be easily transported.

"Furthermore, fermentation of milk into yogurt or cheese lowers lactose content, rendering these products more tolerable for lactose intolerant individuals. In some cases even enhancing other essential nutrients such as fat soluble vitamins."

But cheese was traditionally made with just these four ingredients:

1. Milk.
2. Salt.
3. Starter culture, which's used to make the desired cheese strain (for ex. Nuremen versus Swiss).
4. Animal rennet is used as a clotting agent to curdle the milk into cheese, separating the liquid parts of milk from the solids — it is an essential part of the cheese-making process.

You still culture it to milk and let it ferment, which separates the milk into curds and whey. The curds are then cut, salted and age them. And voila — cheese!

Rennet is a complex set of enzymes that are naturally produced in the stomachs of ruminant animals, like cows.

It's the most active enzyme in rennet, which is a protease enzyme, meaning it breaks down protein. Rennet from animals also contains other enzymes like pepsin and lipase.

So these enzymes in rennet target casein, the main protein in milk. They cause the milk to coagulate, or curdle and re-coagulate into large clumps, forming cheese curds.

So, rennet serves as a vital part of cheesemaking since it helps curdle the milk into cheese, separating the liquid parts from the solids.

Types of rennet

There are four types of rennet used in the cheese-making industry: animal rennet, vegetable rennet, microbial rennet and FPC (a GMO version).

1. Animal rennet — Animal rennet is the most natural and oldest form of rennet, and what was traditionally used in cheese making. There are milk-clotting enzymes naturally occurring in the stomachs of young ruminant animals.

It is well known in the cheese-making industry that animal rennet produces a superior cheese. Cheese made with animal rennet has a smoother texture and more complex flavor profile, which is why it's preferred by many cheesemakers.

2. Vegetable rennet — One alternative to animal rennet is vegetable rennet, which's ultimately same a lot depending on the source, and is also referred to as "vegetable rennet" is misused a lot.

But vegetable rennet is derived from plants that possess coagulation enzymes, such as thistles, nettles, fig trees, mallow and milk vetch (also known as cow vetch). Some examples include cotton thistle, fig tree leaf or nettles.

However, it is well known in the cheese industry that vegetable rennet can negatively impact the final texture and flavor of the cheese.¹ Most plant-derived rennet is categorized as "acid milk" because it has a low pH. Unfortunately, acidic milk results in poor cheese yield and formation of more bitterness during aging.² Vegetable rennet can also result in a cheese that has a "chalky" mouthfeel.³ This is why most of the cheese with the vegetable rennet does not melt vegetable rennet. It's either microbial rennet or animal rennet. Vegetable rennet is rarely used in cheese labeling.

3. Microbial rennet — Another alternative to animal rennet is "microbial rennet," where the coagulating enzymes are produced by a specific type of mold, fungus or yeast organism grown and fermented in a lab setting (often but not always GMO). Microbial rennet is also referred to as fermentation-produced chymosin, made by Pfizer.

This is considered vegetarian-friendly as the enzyme produced by the organism is not derived from an animal. There is also significant interest in the cheesemaking world that cheese made with this type of microbial rennet can be labeled as "vegetarian cheese." Pfizer's FPC rennet is produced using a genetically engineered strain of "sanitized aspergillus niger."

"Microbial processed are mainly produced by fungi and bacteria in the process of growth and metabolism. Microorganisms release the enzymes of a short growth cycle, easy fermentation, and are not limited by space and region of production. …

"Therefore, the cost of microbial MCEs (microbial enzymes) is low … Microbial MCEs are widely used in the food industry, and their main role is heating to low-meat yield and tolerance."

4. Genetically modified FPC — To overcome some of the shortcomings of the vegetable and microbial rennets like the potential cheese taste, scientists have leveraged genetic engineering technology to create new, genetically modified systems that generate these milk-curding enzymes.

Introducing the most common alternative to animal rennet in cheese making — FPC, also known as fermentation-produced chymosin, or genetically engineered, is the outmost living of ruminant animals.

In fact, 90% of the cheese manufactured in the U.S. uses these enzymes from GMOs.

FPC was created by the one and only Pfizer (biotech company) and is made by using GMOs and genetic engineering where the genetic coding organisms are modified. The "safety" of FPC was evaluated by a 90-day rodent.

RFK Jr. and Brian Rooker's New Book "Vax Unsafe"
ORDER NOW

How FPC is made

Here's how it is made. The rennet-producing gene is taken out of the animal and inserted into the DNA of a microbe. The microbe is then fermented in a vat. And acting in a process known as gene splicing (a type of recombinant DNA technology).

Once inserted, the newly placed gene initiates the production of the chymosin enzyme within the host. The host culture is then cultivated and fermented.

These recombinant DNA technologies are relatively new and became popular in the 1980s when the U.S. Supreme Court by a 5-4 vote ruled that new life forms could be patented.

In March 1990, in another precedent-setting decision, the U.S. government's office, the U.S. Food and Drug Administration (FDA) approved the use of PFC in food. It was the first time a bioengineered product was approved for use in the U.S. food system.

Pfizer's bioengineered FPC was granted GRAS status. This means that Pfizer was not required to file pre-approved requirements that other new food additives must have food additives.

Since Pfizer demonstrated what is often referred to as "substantial equivalence," the FDA concluded that bioengineered chymosin was substantially equivalent to the animal-derived version, and therefore, it was not necessary to conduct a full battery of safety tests.

In one pre-GMO letter, the "GRAS" label is a little hard word and just a big loophole. In general, federal law requires the FDA to ensure that food additives are safe and mandates a rigorous pre-market safety review process. But the loophole — GRAS.

The GRAS loophole

Companies can self-declare, and designate as designated "GRAS" and don't go FDA review. Essentially, we must trust that food companies will conduct unbiased safety determinations before adding these new GMO substances to our food.

Donate $50 or more and receive a free copy of "The Wuhan Cover-Up"
DONATE NOW

"According to the FTC [Federal Trivial, Drug, and Cosmetic] Act, food additives are those substances that are intentionally added to food. Substances that are not intended to be added to food are considered to be contaminants."

Making the public and other regulatory agencies like FDA are generally modified, dairy products using this technology are exempt from having to label their products on labels.

In fact, FPC is total listed as "microbial rennet" or "vegetable rennet" on labels. Therefore, consumers have no way of knowing if they're buying GMO cheese.

The "Non-GMO" national project does not agree with the FDA's GRAS designation and believes this is a high-risk ingredient. Moreover, PFC is not committed to U.S. Pharmacopeia and Food Chemicals Codex standards.

Here is a comment from the American Cheese Society:

"FPC rennet is a genetically modified organism (GMO). According to the culture companies, 90% of North American cheese is made with FPC rennet. Consumers have the right to know if their cheese is made with microbial rennet and the original non-GMO type.

"And the fact that use of FPC-type microbial rennet is not labeled is GMO labels those who oppose GMOs in the dark when it comes to choosing cheese."

And once again, FPC is used in 90% of the cheese made in the U.S.!

These alternative rennet methods are up to par with the cheese-curding power of animal rennet since they speed up the aging process to make cheese ready for market faster, which means more profits.

They also allow cheese companies to market to vegetarians (since animal rennet comes derived from the stomach of a ruminant animal, would not be allowed). But FPC is GMO.

Safety concerns of GM enzymes

Well, again, this technology is new. So there are no long-term studies evaluating the safety of eating a small amount of the genetically modified bacteria that every single day.

But there are two main concerns: N-toxicity and D-digestive issues since these rennet alternatives can serve as an allergen.

Toxicity concerns

Toxicity means that the enzyme solution contains biotoxins from the genetically modified host mold or fungus that is being cultured and fermented in the lab.

The producers of these enzymes claim the final FPC enzyme solution is highly purified, but some people reach as though they still contain enough trace allergens from the host microorganisms themselves.

In fact, traces of the genetically engineered enzyme have been found in cheese.⁴ Non-GMO national project does not agree with the FDA's technology

Mary Matthews
2 months ago

How do we know????

5 0 Reply

Kim from Brooklyn
2 months ago

Pretty much comes back to basics.

If your food is packaged and has more then a few ingredients one can recognize, keep walking.

Spend more time looking for natural, not packaged, processed, etc and that will send a big message where it hurts the most. Their pockets.

As long as we keep purchasing products set to kill us and make them rich, we deserve to live a miserable life. Nothing in life is meant to come to us easily. This would be the first lesson I thing they should teach children in school.

4 0 Reply

April45
2 months ago edited

I found out that Tillamook Cheese now uses factory farming. I have bought this cheese for years since I used to visit the factory on the beautiful Oregon coast as a child. I read the label to see what kind of rennet they used and it said "vegetable rennet", so now I am worried. I cannot believe the cheese industry is not required to put genetically engineered ingredients on its labeling. Thank you Dr. Mercola and Defender for outing them.

4 0 Reply

Kim from Brooklyn → April45
2 months ago

Believe it. A very smart person once said "when someone tells you who they are, believe them".

2 0 Reply

Beatrice → Kim from Brooklyn
2 months ago

Yes, who was that smart person? I refer to this quote many times a day in business dealings. In fact Kim, I just had an encounter with a shyster this morning and I have been kicking myself for not trusting my very accurate instincts earlier in the relationship despite the red flags from the very beginning. He did indeed " tell me who he was".

Glad to be done with him and all is good now :D

0 0 Reply

Kathleen Blanchard → Beatrice
2 months ago

Beatrice & Kim- I heard it from Maya Angelou, and it has stuck with me ever since.

1 0 Reply

Beatrice → Kathleen Blanchard
2 months ago

Ah! That is definitely something Maya would have said.

0 0 Reply

Polly Green
2 months ago

This is really upsetting.

4 0 Reply

Gary Brown
2 months ago

Great article Dr. Joseph Mercola.

October 27, 2023 Genetically Modified Ingredients in Most US Cheeses

In this article let's dive into why I believe you should only be eating cheese made with ANIMAL RENNET, and how over 90% of the cheese sold in the US does not use this and instead uses a genetically modified version made by Pfizer.

https://nourishcooperative....

see more

3 0 Reply

Kathleen Willey
2 months ago

Would it be preferable if they mentioned what rennet is? It is from the lining of the stomach of a dead baby calf - mostly useless male baby calves born into the dairy industry. The only reason dairy exists is because a female cow has been forcibly impregnated and after carrying her precious baby for 9 months her baby is stolen so humans drink their milk or make ice cream , cheese, yogurt etc.
If the baby is male they are killed shortly afterwards so this is where the rennet comes from. If the baby is female she is imprisoned in a lonely crate and fed formula until she is old enough to be forcibly impregnated. This cycle repeats itself over and over again until she is so exhausted she is killed at about age 5 or 6 to become cheap hamburger meat. Anyone care? Where is the compassion CHD? Do people really want honesty in food labeling?🤔

6 4 Reply

Lainy Wen → Kathleen Willey
11 days ago

I completely agree if labeling is to be honest then be brutally honest where animal rennet comes from. Baby calf fourth stomach.

0 0 Reply

Drummer → Kathleen Willey
2 months ago

Or the male (and female) calves are raised in an iron deficient environment until they are ready to be processed for the anemic, kosher white veal prized by the Jewish (especially New York) population. A veterinarian relative and his BN wife raise calves in this manner. It's like raising animals in a confined hospital ward.

0 0 Reply

Carmen8
2 months ago

Needs to post the cheese manufacturers/brands using this genetically modified rennet.

1 0 Reply

BEBrownie
2 months ago

This is interesting. I've been diagnosed with Chrones, Lupus, Rheumatoid Arthritis & Diverticulitis. Otherwise 'normal' 60-year-old male, no remarkable co-morbidities, normal BMI. I've gone GMO free, non-antibiotic fed meats, non- farm fish...long story short, I don't have all the aforementioned diseases. Here is a WOW point. I went to Spain, Germany & S. Africa last year, 3 weeks. I ate everything the 'natives' ate and had NO GI problems, nor inflammatory 'issues'. The food was 'clean' compared to what we have in USA. Most of the 'toxins' and GMO products in USA are banned in other countries. I love my country, but we have (literally), a completely inflammatory food chain.
Now I have to dodge cheese, too? Oh boy...

1 0 Reply

Querc → BEBrownie
a month ago

Just find cheese produced overseas. Most grocery stores have cheese like manchego, produced in Spain, or goat cheeses produced in Holland.

It is a shame what has happened in the U.S. and we need more and more people to buy local, organically-produced food and start growing more of our own.

0 0 Reply

Amy RP
2 months ago

Apparently we've been eating these GMO cheeses since 1996... This is what Wikipedia had to say about it:

"Fermentation-produced chymosin:
Because of the above imperfections of microbial and animal rennets, many producers sought other replacements of rennet. With genetic engineering it became possible to isolate rennet genes from animals and introduce them into certain bacteria, fungi, or yeasts to make them produce recombinant chymosin during fermentation. The genetically modified microorganism is killed after fermentation and chymosin isolated from the fermentation broth, so that the fermentation-produced chymosin (FPC) used by cheese producers does not contain a GMO or any GMO DNA. FPC is identical to chymosin made by an animal, but is produced in a more efficient way. FPC products have been on the market since 1990 and, because the quantity needed per unit of milk can be standardized, are commercially viable alternatives to crude animal or plant rennets, as well as generally preferred to them in industrial production.[16]"

So it would seem the GMO doesn't make it to the final product? Any thoughts?

1 0 Reply

Querc → Amy RP
a month ago

The article mentions that the biotoxins from the GMO likely do become part of the end product: "traces of the genetically engineered bacteria have been found in enzymes."

0 0 Reply

lanainutahdesert
2 months ago

It's becoming more and more clear. The only way we'll avoid these horrifying food traps is by eating a whole-foods, plant-based diet consisting of organic plants and vegetables. It's a shame that each community doesn't have organic farms near to supply our basic food needs. That would be ideal.

1 0 Reply

Beatrice
2 months ago

Loophole Def:
A way of avoiding or escaping a cost or legal burden that would
otherwise apply by means of an omission or ambiguity in the wording of a
contract or law.

Why do loopholes exist at all? They exist for the corrupt elite. Otherwise, the person responsible for the legalese of the ambiguous law or contract was being deliberately deceptive or not qualified and should be held accountable via jurisprudence and the loophole removed or corrected immediately.

1 0 Reply

jenn
2 months ago

Thank you Dr. Mercola. I'll wait until I get to the farmer's market to buy cheese.

1 0 Reply

Kim Clark
2 months ago

It's a good day to be vegan.

2 3 Reply

mcwinaz
2 months ago

I stopped reading after the misinformation statement - Cheese is incredibly nutritious!

1 1 Reply

Kim from Brooklyn → mcwinaz
2 months ago

A conscious consumer is a smart consumer.

1 0 Reply

Voyt Regnal
1 months ago

Clearly DEBUNKED. I stopped trusting Mercola.

0 0 Reply

BethC → Voyt Regnal
2 months ago

Thanks for sharing this, Voyt. I look forward to further clarification as information about this continues to come out. In the mean time, I note that this article wasn't written by Dr Mercola but by Ashley Armstrong. I will keep reading and being enlightened by Dr Mercola whose work has been at the forefront of truth-telling about health, well-being and the medical-industrial complex for decades.

0 0 Reply

BethC
2 months ago

As for finding local, trustworthy sources for cheese and other foods, check out your nearest chapter of the Weston A Price Foundation, which has chapters all over the country (and world). They connect consumers with sources of properly produced, nutrient-dense foods. Azure Standard may also be a good resource.
In any case, it seems we all need to spread awareness about this new, hidden food hazard. I'll be contacting the manufacturers of cheeses I get at Costco or health food stores to ask if they use non-GMO animal rennet, including brands like Kerrygold, Coastal and other European companies since I don't think we can assume their exports are safe just because they're from Europe. Let's all do this since the only way they'll change is if they hear from customers. And then we can report back here if we find trustworthy sources.

0 0 Reply

kaoshispano
2 months ago

NOT for anyone want eat healthy... and the calcium derivates make you die sooner, THIS IS now their business in the colapsed NWO.

0 0 Reply

Subscribe Privacy Do Not Sell My Data

THE DEFENDER IS AVAILABLE IN:

ENGLISH SPANISH PORTUGUESE GERMAN ITALIAN FRENCH

Children's Health Defense

Children's Health Defense® is a 501(c)(3) non-profit organization. Our mission is to end childhood health epidemics by working aggressively to eliminate harmful exposures, hold those responsible accountable and establish safeguards to prevent future harm. We fight corruption, mass surveillance and censorship that put profits before people as well as advocate for worldwide rights to health freedom and bodily autonomy.

TAKE ACTION

DONATE FREE SIGN-UP BECOME A MEMBER

Donations are tax deductible to the full extent of the law. EIN #26-0388604

Children'sHealth.Defense • Legal.Disclaimer • Terms.of.Use • Privacy.Policy • Donate • About.Us • Work.for.CHD • Contact • Social • Membership.Login.&.FAQ

© 2016 - 2024 Children's Health Defense® • All Rights Reserved • Sitemap